



## **USER MANUAL**

# **LASER TABLE RGB3**

Keep this manual for future reference.

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## 1. INTRODUCTION AND UNPACKING

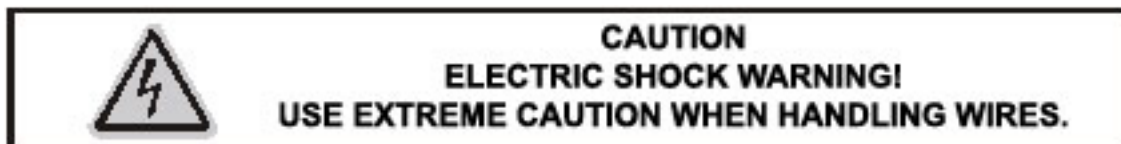
Thank you for purchasing the MICROH LASER TABLE 3W laser system. For your own safety and knowledge, please read this manual before installing or operating the device. This manual covers the important information on installation and applications. Please install and operate the fixture according to instructions. Meanwhile, please keep this manual for future reference.

The MICROH LASER TABLE 3W laser is made of a new type of high temperature cast aluminum casing. The fixture is designed and manufactured strictly following CE standards, complying with international standard DMX512 protocol. This fixture is applicable but not limited to large-scale live performances, theater, studio, nightclubs and discos.

The MICROH LASER TABLE 3W laser system uses 3 coloured laser diodes that are carefully aligned with the internal scan mirrors. Please carefully unpack it when you receive the fixture and check if it was damaged during the transportation. And please check whether the following items are included inside the box:

Fixture – One	Power Cord – One	DMX Signal Cable – One	User Manual – One
Key – One	Compact Reflector Mirrors – Eight		

## 2. SAFETY INSTRUCTIONS



This device has left the factory in perfect condition. In order to maintain this condition and to ensure safe operation, it is absolutely necessary for the user to follow the safety instructions and warning notes written in this user manual.



### Important:

*Damages caused by the disregard of this user manual are not subject to warranty. The dealer will not accept liability for any resulting defects or problems.*

If the device has been exposed to temperature changes, do not switch it on immediately. The arising condensation could damage the device. Leave the device switched off until it has reached room temperature, and is dry.

This device falls under protection-class I, therefore it is essential that the device be grounded. The electrical connection must be carried out by a qualified technician.

The device should only be used with rated voltage and frequency. Make sure that the available voltage is not higher than 120V as stated at the end of this manual.

Make sure the power cord is never crimped or damaged in any way, as this could cause shock and damage. If your power cord is damaged in any way, please purchase a new cable from your local MICROH dealer. Always disconnect power, when the device is not in use or before cleaning it. Never pull out the plug by tugging the power cord.

During initial start-up, some smoke or smell may arise. This is a normal process, and does not necessarily mean that the device is defective. It should decrease gradually. Please do not project the beam onto combustible substances.

Fixtures cannot be installed on or near combustible substances. Keep more than 50cm distance from wall for proper ventilation and air flow. If your fixture is or has become damaged in any way, it shall be exclusively replaced or repaired by the manufacturer to avoid any hazard.

To be installed on a fixed flat surface in a level position. Prevent this product from strong vibration or impact. Do not use under shaking conditions.

Do not turn on this fixture frequently, as it will shorten the life of the laser diodes. **THIS UNIT REQUIRES A DUTY CYCLE OF 15 MINUTES EVERY 2 HOURS.**



**CAUTION!**

Never touch the device during operation!  
The housing may heat up



**CAUTION!**

Never look directly into the light source,  
as sensitive persons may suffer an epileptic shock.



**CAUTION!**

The electric connection must only be carried out by a qualified electrician.



Class 4 is the highest and most dangerous class of laser, including all lasers that exceed the Class 3B AEL. By definition, a class 4 laser can burn the skin, or cause devastating and permanent eye damage as a result of direct, diffuse or indirect beam viewing. These lasers may ignite combustible materials, and thus may represent a fire risk. These hazards may also apply to indirect or non-specular reflections of the beam, even from apparently matte surfaces—meaning that great care must be taken to control the beam path. Class 4 lasers must be equipped with a key switch and a safety interlock. Most industrial, scientific, military, and medical lasers are in this category, notably those at the US National Ignition Facility.

### **3. OPERATION INSTRUCTIONS**

- Do not turn on the fixture if it has been through severe temperature differences. Damage may occur to the fixture. Wait until unit is at room temperature to operate.
- The unit should be protected from any tremor or agitation during transport.
- Do not expose the fixture in any excessive heat, moisture or any environment with too much dust when installing. Do not lay any power cables on the floor. It may cause electronic shock or damage to persons or equipment.
- Make sure to attach the safety chain and ensure the screws are properly screwed in when installing the fixture.
- Make sure the lens is in good condition. It is recommended to replace the unit if there are any damages or severe scratches.
- Make sure the fixture is operated and installed by qualified personnel.
- Keep the original packaging in case of defective product.
- Any non-manufacturer additions, modifications or changes in any way will void all warranty.
- Please do not attempt to open unit. It is only to be serviced by an authorized technician. If this occurs, or is apparent, the warranty will be voided.
- The fixture's warranty will be voided if there are any malfunctions from not following the user manual or any illegal operation (shock short circuit, electronic shock, lamp broke, etc.)

#### **AUTO-RUN MODE**

- To run the LASER TABLE 3W in AUTO mode, you must set the unit to "AUTO-PLAY" using the on board menu and Once selected, press ENTER to confirm.
- Also, DMX address has to be set to 000 or 0001.

#### **SOUND ACTIVE MODE**

- To run the LASER TABLE 3W in sound active mode, you must set the unit to "AUDI" using the on board menu. Once selected, press ENTER to confirm.
- Also, DMX address has to be set to 000 or 0001.

#### **DMX MODE**

- To control the LASER TABLE 3W via DMX, select "dxxx" on the display. By using the UP and DOWN buttons select your desired DMX address and press ENTER to confirm. The TITAN RGB has a total 12 channels of DMX.

#### **ILDA (PC CONTROL) MODE**

- To run the LASER TABLE 3W in IDLA mode or (PC CONTROL MODE) simply connect your ILDA signal cable to the DB25 jack located on the rear of the unit, and the unit will automatically recognize. NOTE: when ILDA is connected, it supersedes all modes.

## 4. MOUNTING AND INSTALLATION

**Caution:** For added protection, mount the fixtures in areas outside walking paths, seating areas, or in areas where the fixture might be reached by unauthorized personnel. Before mounting the fixture to any surface, make sure that the installation area can hold a minimum point load of 10 times the device's weight. Fixture installation must always be secured with a secondary safety attachment, such as an appropriate safety cable. Never stand directly below the device when mounting, removing, or servicing the fixture.

Laser Table has to be set on a flat level surface (see illustration below). Be sure this fixture is kept at least 1m (3.3 ft) away from any flammable materials (decoration etc.). Always use and install the supplied safety cable as a safety measure to prevent accidental damage and/or injury in the event the clamp fails.

**Mounting Points:** Overhead mounting requires extensive experience, including calculating working load limits. A knowledge of the installation material being used, and periodic safety inspection of all installation material and the fixture are all imperative and should only be performed by a qualified technician. Improper installation can result in bodily injury and damage.

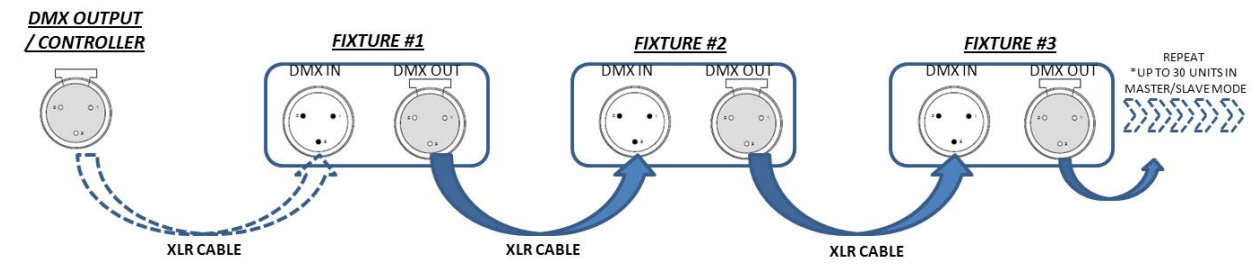
Be sure to complete all rigging and installation procedures before connecting the main power cord to the appropriate wall outlet.

Regardless of the rigging option you choose for your MICROH LASER TABLE 3W fixture, always be sure to secure your fixture with a ratchet strap. Please see picture below.



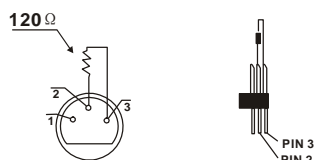
## 5. DMX-512 CONTROL CONNECTIONS

This fixture complies with international USITT DMX standards and can be used with either a 3 pin or 5 pin DMX connector. Plug in the provided 3 pin XLR cable to the female 3-pin XLR output of your controller and the other side to the male 3-pin XLR input of the MICROH LASER TABLE 3W. To connect the units to DMX, you must daisy chain the fixtures together as referred in the diagram below. Always end your DMX-512 connection with a DMX terminator.

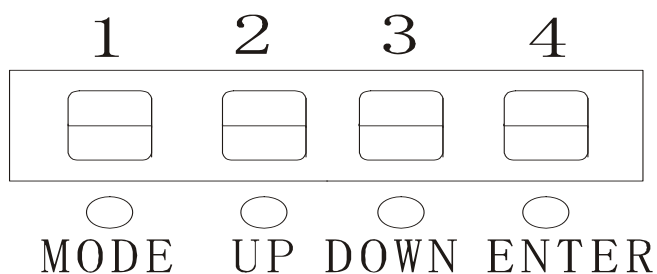




For installations where the DMX cable has to run a long distance, or is in an electrically noisy environment, it is recommended to use a DMX terminator. This helps in preventing corruption of the digital control signal by electrical noise. The DMX terminator is simply an XLR plug with a 120  $\Omega$  resistor connected between pins 2 and 3, which is then plugged into the output XLR socket of the last fixture in the chain. Please see illustrations below.



## 6. MENU NAVIGATION



### FUNCTIONS

- Mode: Auto, DMX & Sound Active. Press ENTER to confirm.
- Up: Increase DMX Address (Under DMX Mode) Press ENTER to confirm.
- Down: Decrease DMX Address (Under DMX Mode) Press ENTER to confirm.
- Enter: Press when confirming any setting.

## 7. ILDA MODE

When laser connects to PC through ILDA interface, LCD will display "ILDA"; to have total control by ILDA interface, a DMX controller must be connected to a Laser Table and the first channel should be set to Animation/PC mode between 192 and 255.

Channel	DMX Address	Control Content
Channel 1	0~63	Sheltering mode
	64~127	Grating lens mode
	128~191	Laser point mode
	192~255	PC control mode

PC control mode: Laser brightness and scanner output are controlled by computer.

Grating Lens Mode: the first channel should be set between 64~127, see chart below for reference:

Channel	DMX Address	Control Content
Channel 2	10~255	Select gobos
Channel 3	0~255	Adjust the speed of grating lens rotating
Channel 4	0~255	Select colour

Laser Point Mode: the first channel should be set between 128~191, see chart below for reference:

Channel	Function	DMX Address	Control Content
Channel 2	First laser point	0~60	Laser off
		61~119	Laser on
		120~255	Strobe flash
Channel 3	First laser point divided into two	0~60	Laser off
		61~119	Laser on
		120~255	Strobe flash
Channel 4	Second laser point	0~60	Laser off
		61~119	Laser on
		120~255	Strobe flash
Channel 5	Second laser point divided into two	0~60	Laser off
		61~119	Laser on
		120~255	Strobe flash
Channel 6	Third laser point	0~60	Laser off
		61~119	Laser on
		120~255	Strobe flash
Channel 7	Third laser point divided into two	0~60	Laser off
		61~119	Laser on
		120~255	Strobe flash
Channel 8	Forth laser point	0~60	Single laser point
		61~119	Double laser point
		120~255	Strobe flash
Channel 9	Adjust speed	0~255	Control the speed of strobe
Channel 10	Colour	0--255	Select colour

## 8. DMX CHANNELS

When connected to DMX controller, laser will switch to DMX mode automatically. LCD displays “DMX” and DMX address. User can select DMX address through press “UP” or “DOWN”. Under DMX mode, laser brightness, scanner output, laser pointer, and grating effect will be controlled by built-in program. See chart below for reference:

Channel	DMX Address	Control Content
Channel 1	0~63	Sheltering mode
	64~127	Grating lens mode
	128~191	Laser point mode
	192~255	Animation mode

Animation Mode: the first channel should be set between 0~63. See chart below for reference:

Channel	Function	DMX Address	Control Content
Channel 2	Gobos	0-255	Select gobos
Channel 3	Strobe flash	0-10	No strobe flash
		11-255	Auto strobe flash
Channel 4	Level moving	0-125	Hand adjustment position
		126-185	Auto left-right cycle
		186-225	Auto jumping left-right cycle
		226-255	Auto jumping
Channel 5	Vertical moving	0-125	Hand adjustment position
		126-185	Auto up-down cycle moving
		186-225	Auto jumping up-down cycle
		226-255	Auto jumping
Channel 6	Zoom in/out	0-10	No zoom in/out
		11-100	Hand adjustment size
		101-150	Zoom in
		151-200	Zoom out
		201-255	Zoom in/out
Channel 7	X axis rotating	0-10	No rotating
		11-110	Hand adjustment
		111-255	Auto rotating
Channel 8	Y axis rotating	0-10	No rotating
		11-110	Hand adjustment
		111-255	Auto rotating
Channel 9	Z axis rotating	0	No rotating
		1-180	Hand adjustment
		181-217	Auto clockwise rotating
		218-255	Auto counter-clockwise rotating
Channel 10	Printing gradually	0-74	Hand adjust printing gradually
		75-104	Auto printing gradually(add)
		105-180	Auto printing gradually(reduce)
		180-255	Auto cycle printing gradually
Channel 11	Colour	0-255	Select colour

Grating Lens Mode: the first channel should be set between 64~127. See chart below for reference:

Channel	DMX Address	Control Content
Channel 2	10~255	Select gobos
Channel 3	0~255	Adjust the speed of grating lens rotating
Channel 4	0~255	Select colour

Laser point Mode: the first channel should be set between 128-191, its function as below:

Channel	Function	DMX Address	Control Content
Channel 2	First laser point	0~60	Laser off
		61~119	Laser on
		120~255	Strobe flash
Channel 3	First laser point divide into two	0~60	Laser off
		61~119	Laser on
		120~255	Strobe flash
Channel 4	Second laser point	0~60	Laser off
		61~119	Laser on
		120~255	Strobe flash
Channel 5	Second laser point divide into two	0~60	Laser off
		61~119	Laser on
		120~255	Strobe flash
Channel 6	Third laser point	0~60	Laser off
		61~119	Laser on
		120~255	Strobe flash
Channel 7	Third laser point divide into two	0~60	Laser off
		61~119	Laser on
		120~255	Strobe flash
Channel 8	Forth laser point	0~60	Single laser point
		61~119	Double laser point
		120~255	Strobe flash
Channel 9	Adjust speed	0~255	Control the speed of strobe
Channel 10	Colour	0~255	Select colour

## 9. KEY FEATURES

- RGB Colour Mixing DPSS Diodes (Red650nm, Green 532nm, Blue455nm)
- On-Board Digital Display
- Controllable via DMX (3 Pin XLR)
- IDLA Input for PC Control
- High Speed Quality 30K Scan Motors (Max 30,000 pps)
- 3W Total Laser Output (Red 1W + Green 1W + Blue 1W)
- DMX, ILDA, Sound Active, Auto,
- 4, 10 or 11 DMX Channels

## 10. TECHNICAL SPECIFICATIONS

**MODEL:** LASER TABLE 3W

**LASER DIODE:** DPSS, Red650nm, Green 532nm, Blue455nm

**SCANNER:** 30 Kpps

**SCANNING ANGLE:**  $\pm 30^\circ$

**COOLING SYSTEM:** Fan

**MAX RUN TIME:** Approximately 4 Hours

**WARM-UP TIME:** < 15 Minutes

**WORKING TEMPERATURE:**  $10^\circ \sim 35^\circ \text{C}$

**VOLTAGE:** 120VAC 60Hz

**FUSE:** 3A/250V

**DIMENSIONS:** 32.87" x 16.93" x 9.21" / 835 x 430 x 234 mm

**CASE DIMENSIONS:** 39.37" x 20.47" x 16.54" / 1000 x 520 x 420 mm

**NET WEIGHT:** 57.4 lbs / 26.04kgs

**GROSS WEIGHT:** 108.6lbs / 49.26kgs

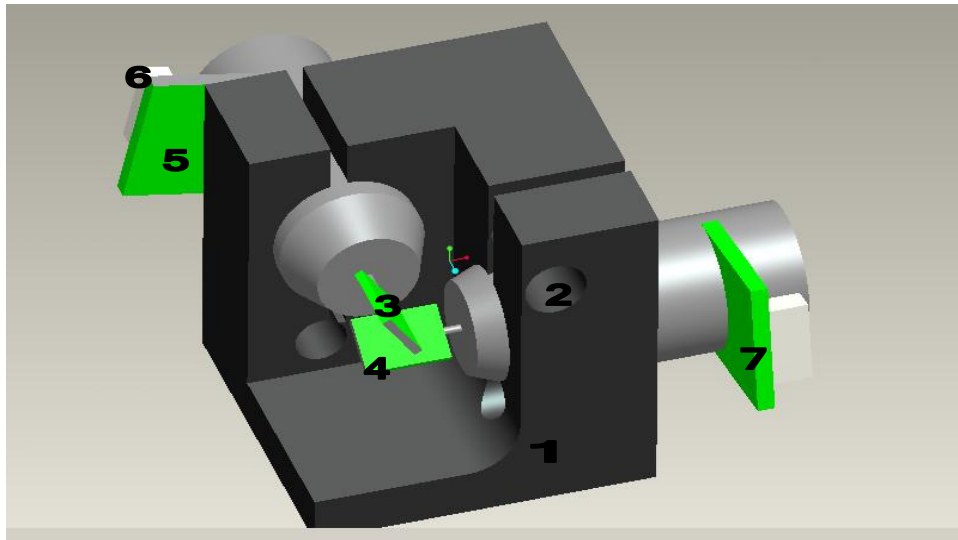
**WARRANTY:** 2 Year Limited Warranty. The Laser diodes are covered under a 6 month replacement warranty.

## 11. ILDA 25 PIN SPECIFICATIONS

1	X+	14	X-
2	Y+	15	Y-
3	No Function	16	No Function
4	Interlock A	17	Interlock B
5	Red+	18	Red-
6	Green+	19	Green-
7	Blue+	20	Blue-
8	No Function	21	No Function
9	No Function	22	No Function
10	No Function	23	No Function
11	No Function	24	No Function
12	No Function	25	Ground
13	No Function		

## 12. INSTRUCTIONS FOR SCANNER

Below is scanner photo:

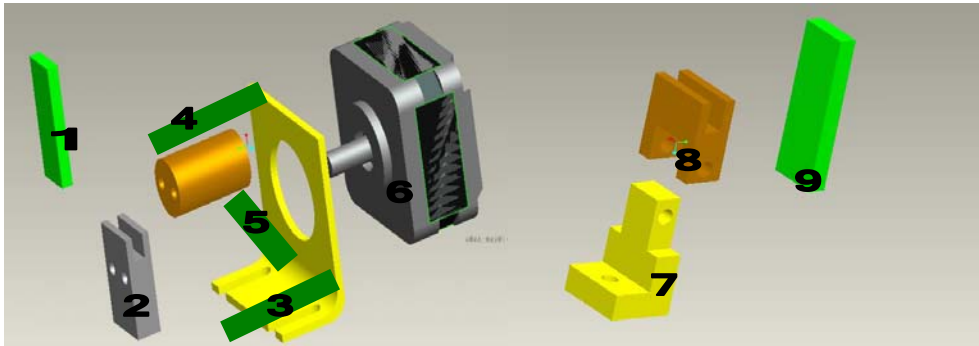


1. Scanner base
2. X axis hex socket cap screws
3. Y axis mirror
4. X axis mirror
5. Y axis hex socket cap screws
6. Y axis dynamo and wire connector
7. X axis dynamo and wire connector

By unscrewing X/Y axis hex socket cap screws to adjust X/Y axis dynamo angle to make laser beam on the centre of lens. And then tighten up the X/Y axis screws.

### 13. INSTRUCTION OF ADJUSTABLE MIRROR HOLDER

Below is photo of the parts for adjusting the laser beam



1. Mirror on motor
2. Mirror holder on motor
3. Down blade on motor in black color
4. Upper blade on motor in black color
5. Motor screw
6. Motor
7. Reflector lens holder
8. Reflector lens support
9. Reflector lens

- Set laser under sound mode, and adjust sound MIC to MIN. By this way, there is no sound signal for lasers and laser stop working.
- Loosen the reflector holder screw (the screw for the fix reflector holder is on the base), turn the holder, adjust laser dot at suitable position, then tighten up the screw.
- Loose two hex socket cap screws which are connect reflector holder and reflector support together, turn reflector support up and down, adjust laser vertical height to suitable place you want, then tighten up the screw.
- During adjustment, if light on motor mirror, please turn the mirror by hand to make light not on the mirror. When adjust all light beam at suitable place you want, adjust sound knob at suitable place, turn on power. It will work well.
- Please don't move or adjust parts NO. 1.2.3.4.5.6.. These Parts can be adjusted only by specialist. Because it is only laser pointer output when adjustment, please don't see the laser dot directly for safety reason.

## 14. TROUBLESHOOTING

Fault	Reasons	Solution
No power	Fuse defective	REPLACE fuse
	Four foot switch bad	REPLACE switch
	Power socket not connected well	REPLACE power socket /power cable
LCD Display has light, no display	12 PIN wire faulty	REPLACE 12 PIN wire
LCD Display no light,no display	LCD Display faulty	REPLACE LCD Display
	Red/black wire didn't connect into 5V	Connect into 5V and turn on power
Fan not working, other is fine	12V fan faulty	REPLACE fan
	Something stuck in the fan	Remove debris
	12V power supply faulty	REPLACE 12V power supply
No sound control	Not under sound control mode	Adjust to sound control mode
	Sound knob adjust at MIN	Adjust sound knob at center place
Motor not working, or rotation slow, but other parts work well	12V power supply faulty	REPLACE 12V power supply
	Motor driver IC faulty	REPLACE 2803
	Main IC faulty	REPLACE main IC(STC11F60XE)
X/Y axis doesn't move or scanner jumping	Optical scanner faulty	REPLACE optical scanner
	±15V power supply faulty	REPLACE±15V power supply
	Signal switch board faulty	REPLACE signal switch board
	Scanner main board faulty	REPLACE scanner main board
DC motor no rotation or no gobo, other parts work well	DC motor faulty	REPLACE DC motor
	Power supply faulty	REPLACE ±5V power supply
	Transformer faulty	REPLACE transformer
	DC motor driving board faulty	REPLACE driving board fault
Cannot control DMX	DMX address for laser not equal to the address for controller	Reset DMX address
	Analog switch IC faulty	REPLACE IC(DJ413)
	Main IC faulty	Main IC(STC11F60XE)
Under ILDA mode, animation is faulty, others are fine	Signal switch board faulty	REPLACE signal switch board
No light or light is dark, others are fine	Power off	Turn on power supply
	Mirror dirty	Clean the mirror
	Laser diode faulty	REPLACE laser diode

## 15. MAINTENANCE AND CLEANING

The following points have to be considered during the inspection:

- 1) All screws for installing the device or parts of the device must be tightly connected, and must not be corroded.
- 2) There must not be any deformations on the housing, colour lenses, fixations or installation spots (ceiling, suspension, trussing).
- 3) Mechanically moved parts must not show any traces of wearing and must not rotate with unbalances.
- 4) The electric power supply cables must not show any damage, material fatigue or sediments.

Further instructions depending on the installation spot and usage must be handled by a skilled installer or technician. Any safety issues must be resolved.



In order to keep the fixture in good condition and extend the life, we suggest regular cleaning to the fixture.

- 1) Clean the inside and outside lens each week to avoid the light output from darkening due to accumulation of dust, dirt, etc.
- 2) Clean the fan each week.
- 3) A detailed electrical check by approved technician every three months is advised. Ensure the circuit contacts are in good condition, and prevent from overheating.

We recommend a frequent cleaning of the device. Please use a moist, lint-free cloth. Never use alcohol or solvents.

There are no serviceable parts inside the device. Please refer to the instructions under "Installation instructions".

Should you need any spare parts, please order genuine MICROH parts from your local dealer.

**IF YOU SHOULD EXPERIENCE ANY PROBLEMS OR ISSUES PLEASE CONTACT MICROH PROFESSIONAL PRODUCTS BY EMAIL AT [info@microhpro.com](mailto:info@microhpro.com)**

In the event that your unit is defective in any way, please contact your local dealer to obtain an RA number for service repair.

**DISCLAIMER – MICROH believes that the information contained within this user manual is accurate. However, Microh is not responsible for any error or addendums to this manual. If you have any comments or general suggestions on how this manual can be improved please contact [info@microhpro.com](mailto:info@microhpro.com). Thank you.**

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